

LONE TREE DITCH  
Lower Rapid Valley Irrigation Ditches  
On the North Side of Rapid Creek  
Caputa Vicinity  
Pennington County  
South Dakota

HAER No. SD-11

HAER  
SD  
52-RACIV,  
5-

PHOTOGRAPHS  
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD  
Rocky Mountain Regional Office  
National Park Service  
P.O. Box 25287  
Denver, Colorado 80225-0287

HISTORIC AMERICAN ENGINEERING RECORD

HAER

SD

52-RACI.V,

5-

LONE TREE DITCH  
RAPID VALLEY IRRIGATION DITCHES

HAER No. SD-11

I. INTRODUCTION

Location: The Lone Tree Ditch is located on the north side of Rapid Creek in Pennington County, South Dakota, in the vicinity of Caputa

Quad: Box Elder, New Underwood SW, Caputa

UTM: Zone 13  
Diversions: 654350 E, 4876020 N  
Upstream split: 657680 E, 4875010 N  
Terminus (south ditch): 660380 E, 4874020 N  
Terminus (north ditch): 661390 E, 4873610 N

Date of Construction: 1881

Present Owner: Lone Tree Water Company  
c/o Bud Jones  
Route 2 Box 4980  
Rapid City, South Dakota 57701

Present Use: Irrigation

Significance: The Lone Tree Ditch is significant for its association with the development of irrigated agriculture in South Dakota. The ditch is a representative example of irrigation systems constructed, maintained, and operated by farmers.

Historian: Lon Johnson  
Renewable Technologies, Inc.  
Butte, Montana 59701  
February 1994

## II. HISTORY

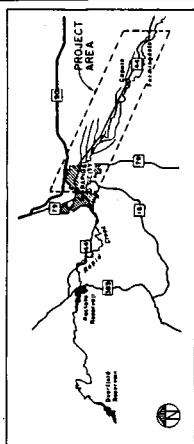
The Lone Tree Ditch is located in the Lower Rapid Valley, in the vicinity of Caputa, South Dakota. (See map on page 3). The ditch diverts water from Rapid Creek, a major tributary of the Cheyenne River, which flows through the valley. The valley is about 40 miles long, and from one to two miles wide. By 1878, farmers occupied the valley floor from Rapid City east for a distance of ten miles. These farmers, individually and in groups, began digging irrigation ditches from Rapid Creek to bring water to their crops. Over the next decade, most of the ditches became part of farmer-owned ditch corporations. The stockholders of these corporations worked together to expand, operate, and maintain the ditches. Of the 12 or so ditch companies that have operated in the Lower Rapid Valley, seven continue to provide water to about 9,000 acres. (See HAER No. SD-5 for a historical narrative of the Lower Rapid Valley irrigation ditches.) The Lone Tree Ditch is one of the earliest of these ditches.

On October 5, 1880, seven farmers in the Lower Rapid Valley met to organize the Lone Tree Ditch Company. The meeting resulted in a decision to construct a ditch about six miles long. Specifications called for the ditch to be six feet wide and one foot deep. The group elected I.C. Jackson, one of the farmers in attendance, as superintendent of the work. They also established "per diem" rates for man and team. At a meeting two weeks later, the group voted to secure the services of E.S. Keller to survey the route of the ditch.<sup>1</sup>

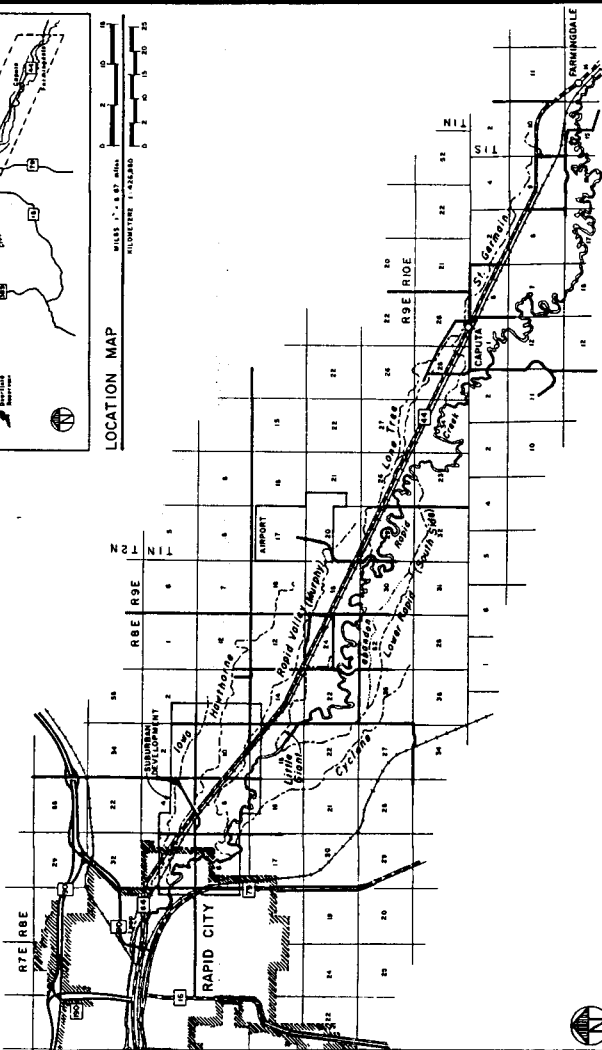
Construction of the ditch was underway in the spring of 1881, when the superintendent reported on the labor performed by the different farmers. The report resulted in the board setting a sliding-scale, annual assessment based on the amount of labor performed. The minutes are not clear on the reason for the sliding scale, but it is likely that it was meant to penalize farmers who were not doing their share of work. What is clear, however, is that \$40.00 in labor--16 days based on the established daily rate--was expected from each farmer. The board also voted to allow a 20 percent discount to those members paying their assessments "in money."<sup>2</sup>

In the summer of 1880, a correspondent for the *Black Hills Journal* visited farms in the Lower Rapid Valley. Among "Our Neighbors" described in a series of articles were three settlers involved with the Lone Tree Ditch Company.

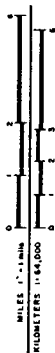
LONE TREE DITCH  
Lower Rapid Valley  
Irrigation Ditches  
HAER No. SD-11  
Page 3



## LOCATION MAP



# PROJECT AREA MAP



Henry C. Blanchard had claimed 160 acres in the spring of 1880. At the time of the *Black Hills Journal* correspondent's visit, he had broken about 12 acres. Most of the land was planted to corn and oats with about one-and-one-half acres in potatoes. The article noted that

The scarcity of rain has been greatly felt down in this part of the valley, but before another year Mr. Blanchard and others will construct a large irrigating ditch and thus prepare themselves for any emergency that may occur in the way of a drouth.<sup>3</sup>

Isaac C. Jackson arrived in the Lower Rapid Valley in June 1879 and claimed 160 acres. He had constructed a log house. The 30 acres of land which he had broken were planted to corn, oats, and potatoes.<sup>4</sup>

George Kretsinger had arrived in the Lower Rapid Valley from Guthrie Center, Iowa in early 1880. Of his 160 acres, 13 acres were planted to oats and two acres to barley. Kretsinger also had 15 acres of hay.<sup>5</sup>

By the fall of 1881, enough work was completed for the company directors to turn their attention to a water supply for the ditch. An old dam across Rapid Creek was to be replaced by a new dam located 300 yards upstream. The new location necessitated a 300-yard-long, 5-foot deep cut, to connect with the existing ditch. An additional assessment on the capital stock was made, apparently to pay for this work. On September 29, 1881, the Lone Tree Ditch Company appropriated 2000 miner's inches of water from Rapid Creek to be taken at the location of the dam.<sup>6</sup>

The following spring, the Lone Tree Ditch Company found itself in court. A suit had been filed by a landowner claiming \$400 in damages resulting from construction of the dam. The board levied a \$2 per share assessment to pay the judgment.<sup>7</sup>

The Lone Tree Ditch Company filed articles of incorporation in 1883. The corporation issued \$15,000 in capital stock divided into 600 shares with a par value of \$25 each. For an unknown reason, the first day's stock issue totaled 610 shares. The number of shares held by each individual varied from 23 to 56.<sup>8</sup>

The corporate minutes over the next decade mainly recorded season to season operation of the ditch. In 1885, the cut from the dam was re-done. The specifications called for a ditch 5-feet wide at the bottom with the banks sloped at 45 degrees, with the excess dirt to be thrown on the south side. This work was let to a Mr. Tipton who submitted the low bid of \$110. The directors also voted to extend the ditch east and locate an additional 2000 miner's inches of water.<sup>9</sup>

In 1890, the directors, for the first time, addressed the amount of water being supplied to each stockholder. They voted to provide each stockholder with two turnouts at the company's expense. The specifications called for the wooden boxes to be:

8-feet long and 18-inches high. The width to depend on the size of the ditch where the box is to be placed. Box to be flared at ditch, to have a board running parallel with the box to divide the water, the box to have a spout at the lower end wide enough to carry the water freely from the ditch. The spout to be made with a gate to shut-down to shut the water off when wanted.<sup>10</sup>

Apparently, as the drought during the early 1890s continued, dissension over individual water usage arose. In 1893, the board hired a "ditch walker." His job was to walk the length of the ditch each 24 hours dividing the water according to each shareholders appropriation.<sup>11</sup>

Minutes of corporate meetings are sporadic after 1897. The corporation failed to file for renewal of its corporate existence in 1903, and had to be reorganized. The new corporation changed its name to the Lone Tree Water Company. Assets of the corporation were unchanged from the original capital stock issue; the new corporation paid the trustees of the dissolved corporation \$15,000. Failure to file for renewal in 1923 again required a reorganization of the company.<sup>12</sup>

The prolonged drought during the 1930s again brought both internal and external attempts to insure an adequate supply of water. New headgates were installed at the farmers' turnouts and a fine implemented for disturbing the headgates after they were set. The fine consisted of two weeks without water for the first offense and four weeks without water for the second offense. The Lone Tree Water Company also filed suit against the Cyclone Ditch Company and Rapid City to protect its prior appropriation of water from Rapid Creek.<sup>13</sup>

In 1937, the Bureau of Reclamation found that 1,500 irrigable acres could be served by the Lone Tree Ditch, although water shortages limited actual acres irrigated to about one-half that number.<sup>14</sup> In 1989, the Lone Tree Ditch provided water to 992 acres.<sup>15</sup>

### III. PHYSICAL DESCRIPTION

The Lone Tree Ditch diverts water from the north side of Rapid Creek in the northeast quarter of Section 30, T1N, R9E, just to the south of U.S. Highway 40. A timber (8" x 15") and pile dam laid across Rapid Creek serves to divert water into the Lone Tree intake canal.

The headgate structure was constructed c. 1960. It consists of a concrete wall placed across the canal. The wall measures 19'-11" in length and is 12" wide. Mounted against the central portion of the structure is the canal gate. It consists of a round gate in a welded angle iron frame. The gate is raised and lowered in the frame by a threaded stem and 30-inch cast iron handwheel. Cast in the wheel is the maker's mark: SHERIDAN IRON WORKS, SHERIDAN, WYO, S524.

The Lone Tree Ditch below the headgate structure is about 10 feet wide at the bottom and 2 feet deep. For most of its remaining length, the ditch is about 6 feet wide and 2 feet deep.

The Lone Tree diversion canal takes water from Rapid Creek at about 2980 feet in elevation. The ditch then heads in a east and southeasterly direction across the Rapid Valley floor through Sections 29 and 28, T1N, R9E. In the southeast quarter of Section 28, the ditch splits. The two ditches roughly parallel each other at about a ten foot difference in elevation through Sections 27, 26, 35. The lower canal ends at about the middle of Section 35 returning water to Rapid Creek through a wasteway. The upper canal extends just into Section 36 where a wasteway turns due south and joins the St. Germain Irrigating Company's ditch just above 2910 feet.

#### IV. FUTURE OF THE PROPERTY

The United States Department of Agriculture Water Quality Hydrologic Unit Area, Lower Rapid Creek Project, in Pennington County, South Dakota, was approved for funding by the Secretary of Agriculture in December of 1990. The Lone Tree Ditch may be affected as part of the project.

See HAER No. SD-5 for a full description of the undertaking.

V. ENDNOTES

1. Lone Tree Ditch Company, Minute Book, 5 October 1880 and 10 October 1880.
2. Ibid., 14 March 1881 and 14 April 1881.
3. *Black Hills Journal*, 7 August 1880.
4. Ibid.
5. Ibid.
6. Lone Tree Ditch Company, Minute Book, 29 September 1881 and 10 October 1881.
7. Ibid., 26 May 1883 and 1 June 1883.
8. Ibid., 1 June 1883; Lone Tree Ditch Company, Stock Book, Certificates Numbered 1 through 14, issued 26 April 1884.
9. Lone Tree Ditch Company, Minute Book, 15 May 1885, 20 May 1885, and 2 June 1885.
10. Ibid., 28 July 1890.
11. Ibid., 6 June 1893.
12. South Dakota Secretary of State, "Articles of Incorporation of Lone Tree Water Company," filed 28 November 1903; South Dakota Secretary of State, "Extension of Charter of the Lone Tree Water Company," filed 24 October 1924; File No. DB-6233.
13. Lone Tree Water Company, Minute Book, see 1934 meetings.
14. U.S. Department of the Interior, Bureau of Reclamation, "Report on Rapid Valley Irrigation Project South Dakota," November 1937, 40. Copy in Library, Bureau of Reclamation, Newell, South Dakota.

15. U.S. Department of the Interior, Bureau of Reclamation, "Rapid Valley Water Management Study Appendix," Appendix J, July 1990. Copy in Soil Conservation Service office, Rapid City, South Dakota.

VII. SELECTED BIBLIOGRAPHIC CITATIONS

*Black Hills Journal.*

Lone Tree Ditch Company. Minute Book.

\_\_\_\_\_. Stock Book.

South Dakota Secretary of State. "Articles of Incorporation of Lone Tree Water Company," filed 28 November 1903. File No. DB-6233.

\_\_\_\_\_. "Extension of Charter of the Lone Tree Water Company," filed 24 October 1924. File No. DB-6233.

U.S. Department of the Interior, Bureau of Reclamation, "Rapid Valley Water Management Study Appendix," Appendix J. July 1990. Copy in Soil Conservation Service office, Rapid City, South Dakota.

\_\_\_\_\_. "Report on Rapid Valley Irrigation Project South Dakota." November 1937. Copy in Library, Bureau of Reclamation, Newell, South Dakota.